USGS
science for a changing world

Earthquake
Shaking

Green
Alert

GSN
ANSS

USAID
FROM THE AMERICAN PEOPLE

M 5.7, 171 km WSW of Merizo Village, Guam

PAGER
Version 1

Origin Time: 2023-10-20 00:04:25 UTC (Fri 10:04:25 local)
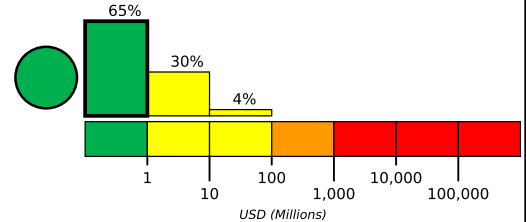Location: 12.4104° N 143.3493° E Depth: 35.0 km

Created: 17 minutes, 46 seconds after earthquake

Estimated Fatalities

Green alert for shaking-related fatalities and economic losses. There is a low likelihood of casualties and damage.
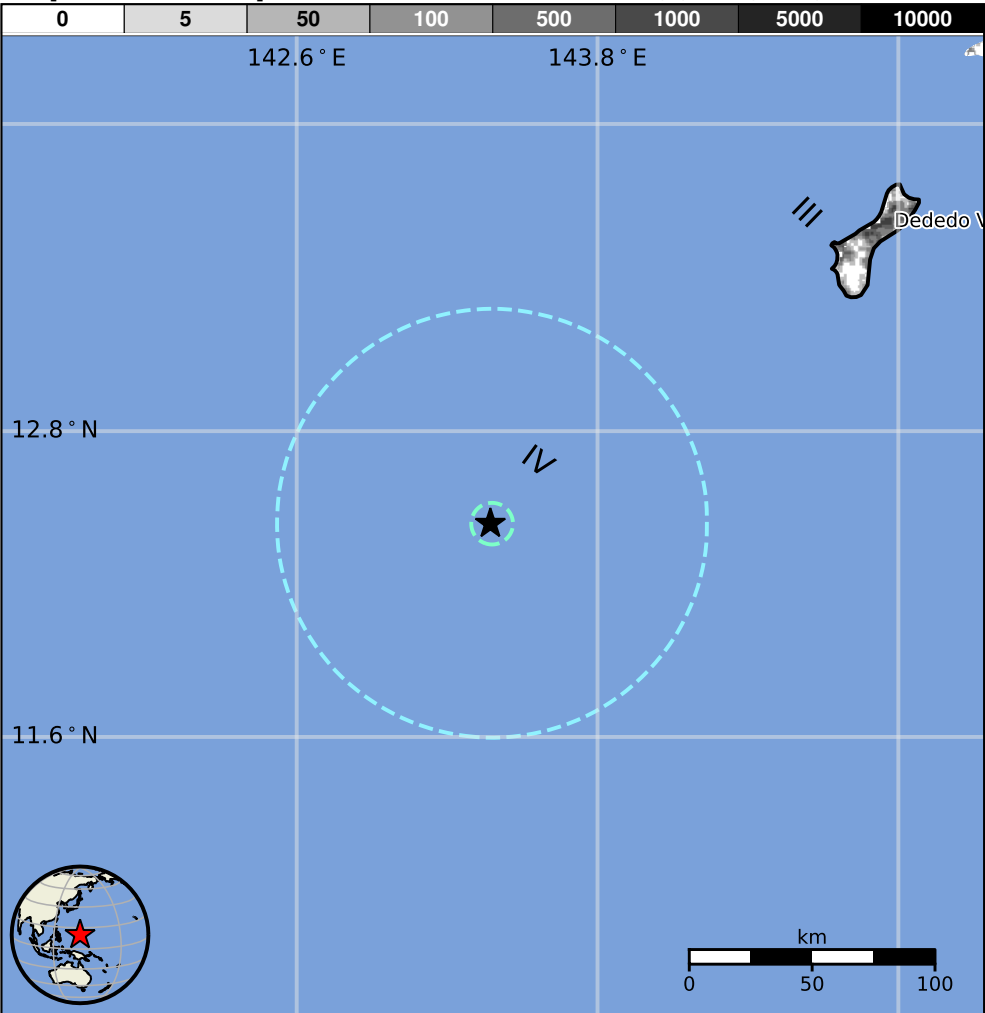
65%
30%
4%

1   10   100   1,000   10,000   100,000
Fatalities

Estimated Economic Losses

65%
30%
4%

1   10   100   1,000   10,000   100,000
USD (Millions)

Estimated Population Exposed to Earthquake Shaking

ESTIMATED POPULATION EXPOSURE (k=x1000)		–*	180k	0	0	0	0	0	0	0
ESTIMATED MODIFIED MERCALLI INTENSITY		I	II-III	IV	V	VI	VII	VIII	IX	X+
PERCEIVED SHAKING		Not felt	Weak	Light	Moderate	Strong	Very Strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	Resistant Structures	None	None	None	V. Light	Light	Moderate	Mod./Heavy	Heavy	V. Heavy
	Vulnerable Structures	None	None	None	Light	Moderate	Mod./Heavy	Heavy	V. Heavy	V. Heavy

*Estimated exposure only includes population within the map area.

Population Exposure

population per 1 sq. km from Landscan

0	5	50	100	500	1000	5000	10000

Structures

Overall, the population in this region resides in structures that are a mix of vulnerable and earthquake resistant construction. The predominant vulnerable building types are informal (metal, timber, GI etc.) and unknown/miscellaneous types construction.

Historical Earthquakes

Date (UTC)	Dist. (km)	Mag.	Max MMI(#)	Shaking Deaths
2001-10-12	187	7.0	VII(48k)	0
2002-04-26	162	7.0	VIII(2k)	0
1993-08-08	177	7.7	IX(3k)	0

Recent earthquakes in this area have caused secondary hazards such as landslides and liquefaction that might have contributed to losses.

Selected City Exposure

from GeoNames.org

MMI	City	Population
III	Umatac Village	1k
III	Merizo Village	2k
III	Inarajan Village	3k
III	Piti Village	2k
III	Guam Government House	<1k
III	Mongmong-Toto-Maite Village	7k
III	**Dededo Village**	**45k**
III	Tamuning-Tumon-Harmon Village	20k
III	Mangilao Village	15k
III	Barrigada Village	9k
III	Yigo Village	21k

bold cities appear on map.   (k = x1000)

PAGER content is automatically generated, and only considers losses due to structural damage. Limitations of input data, shaking estimates, and loss models may add uncertainty.
https://earthquake.usgs.gov/earthquakes/eventpage/us6000lgrt#pager

Event ID: us6000lgrt